

HIGH-TEMPERATURE POWDER DEPOSITION APPARATUS AND METHOD UTILIZING FEEDBACK CONTROL

ABSTRACT OF THE DISCLOSURE

5 A deposit is formed on a deposition substrate using a deposition gun that
burns a mixture of a fuel and an oxidizer to form a deposition gas flow, mixes a
powder into the deposition gas flow to form a deposition mixture flow, and
projects the deposition mixture flow therefrom. The deposition gun is provided
with a flowing coolant. A flow rate of the fuel to the deposition gun, a flow rate
of the oxidizer to the deposition gun, a flow rate of the powder to the deposition
10 gun, and a cooling capacity of the coolant flow are all measured. The flow rate
of the fuel, the flow rate of the oxidizer, the flow rate of the powder, and the
cooling capacity of the coolant flow are all controlled responsive to the step of
measurements.